Claims

1. A compound which has binding affinity for a tumor-specific molecule and is able to effect dyslocalization of the tumor-specific molecule.

2. The compound of claim 1, in which the dyslocalization inhibits the growth of tumor-specific cells.

3. The compound of claim 1 or 2, in which the dyslocalization induces apoptosis in tumor-specific cells.

4. The compound of any of claims 1 to 3, which is a peptide, oligopeptide, protein, fusion protein, or an organic molecule having a molecular weight of < 5000, < 1000 or < 500.

5. The compound of any of claims 1 to 4, in which the tumor-specific molecule is a peptide, oligopeptide, protein, fusion protein, RNA or DNA.

6. The compound of any of claims 1 to 5, which has a binding affinity of 10^{-5} to 10^{-12}, and particularly preferably of 10^{-7} to 10^{-9}.

7. The compound of any of claims 1 to 6, in which the tumor-specific molecule is not present in healthy cells or is present in another form.

8. The compound of any of claims 1 to 7, in which the tumor-specific molecule is a fusion protein.

9. The compound of any of claims 1 to 8, in which the tumor-specific molecule is AML1-ETO.

10. The compound of any of claims 1 to 9, in which the tumor-specific molecule has a DNA binding domain, a signal peptide, kinase activity, chromatin-modulatory properties, protein-protein interaction domains or transcriptional properties.

11. The compound of any of claims 1 to 10, in which the dyslocalization binds the tumor-specific molecule to a nucleic acid sequence which regulates the transcription of a gene.

12. The compound of any of claims 1 to 11, in which the dyslocalization binds the tumor-specific molecule to a nucleic acid sequence which regulates the transcription of a gene, thereby activating or inhibiting the transcription of the gene.

13. The compound of any of claims 1 to 12, in which the compound comprises the peptide sequence of the c-myb DNA binding domain.

14. The compound of any of claims 1 to 13, in which the compound comprises the peptide sequence of the AML-1 binding domain of the myeloid elf like factor.

15. The compound of claim 13 or 14, in which the compound comprises the peptide sequence of the c-myb DNA binding domain and the peptide sequence of the AML-1 binding domain of the myeloid elf like factor.

16. The compound of claim 15, in which the compound has the sequence shown in SEQ ID NO: 1.

17. A nucleic acid encoding a peptide or protein of any of claims 2 to 16.

18. The nucleic acid of claim 17, which is a DNA or RNA.

19. A vector comprising a nucleic acid of claim 17 or 18.

20. A host cell having a nucleic acid of claim 17 or 18 or a vector of claim 19.

21. A medicament comprising a compound of any of claims 1 to 16, a nucleic acid of claim 17 or 18, a vector of claim 19 or a host cell of claim 20.

22. The medicament of claim 21, which further comprises a pharmaceutically acceptable carrier.

23. The medicament of claim 21 or 22, which is formulated for oral, intravenous or intramuscular administration.

24. The use of a compound of any of claims 1 to 16, a nucleic acid of claim 17 or 18, a vector of claim 19 or of a host cell of claim 20 for the preparation of a medicament for the treatment of tumors.

25. The use of claim 24, wherein the tumor is leukemia, in particular acute myeloid leukemia.

26. A method for the preparation of a compound of any of claims 1 to 16, in which the peptide or protein is recombinantly expressed or obtained by protein synthesis.

27. A method for identifying a compound suitable for

the treatment of tumors, in which:

(a) a tumor-specific molecule is identified;

(b) a compound which has a binding affinity for said tumor-specific molecule and is able to effect a dyslocalization of said tumor-specific molecule is identified.

28. The method of claim 27, in which compounds are identified, in which the dyslocalization inhibits the growth of tumor-specific cells or induces apoptosis in tumor-specific cells.

29. The method of claim 27 or 28, in which the tumor-specific molecule is identified by microarray analyses, 2D protein gel electrophoreses with subsequent identification by mass spectrometry, or a combination of said methods.

30. The method of any of claims 27 to 29, in which the compound which has a binding affinity for the tumor-specific molecule and is able to effect a dyslocalization of the tumor-specific molecule is a protein, an RNA, a DNA or an organic compound.

31. The method of any of claims 27 to 30, in which the compound which has a binding affinity for the tumor-specific molecule and is able to effect a dyslocalization of the tumor-specific molecule is identified by means of high-throughput screening methods.

32. The method of any of claims 27 to 29, in which the compound which has a binding affinity for the tumor-specific molecule and is able to effect a dyslocalization of the tumor-specific molecule has been constructed from two parts.

33. The method of claim 32, in which one part of the compound has a binding affinity for the tumor-specific molecule, and the second part is able to effect the dyslocalization of the tumor-specific molecule.

34. The method of claim 32 or 33, in which the two parts are identified in separate screening methods.

35. A method for the preparation of a medicament, comprising the steps of:

(a) identifying a compound suitable for the treatment of tumors by a method of claims 27 to 33;
(b) preparing the compound by synthesis or recombinantly; and
(c) formulating the compound to give a medicament.

36. The method of claim 35, wherein the medicament is suitable for the treatment of tumors, for example for the treatment of leukemia and in particular for the treatment of acute myeloid leukemia.